AMENDMENTS TO THE CLAIMS

The following Listing of the Claims replaces all prior claims in the application.

Claims 1-62 (Cancelled).

63. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type

which variant has a mutation in at least one amino acid ~~aligned with~~ corresponding to an amino acid selected from the group consisting of S10, M70, C515, N535, N537, and N413 of SEQ ID NO:10.

64. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 is N in the wild type;

which variant has at least one of the amino acid mutations corresponding to V494A and G195E, and at least one of the amino acid mutations corresponding to S10P, M70V, C515S, N535D, N537D and N413D of SEQ ID NO:10.

65. (Previously presented) The isolated variant of claim 64, which has the amino acid mutation corresponding to N537D.

66. (Previously presented) The isolated variant of claim 64, which has the amino acid mutation corresponding to V494A.

67. (Previously presented) The isolated variant of claim 66, comprising the amino acid mutation corresponding to C515S .

68. (Previously presented) The isolated variant of claim 66, comprising the amino acid mutation corresponding to S10P .

69. (Previously presented) The isolated variant of claim 66, further comprising a silent mutation at a position corresponding to P136 .

70. (Previously presented) The isolated variant of claim 68, further comprising a silent mutation at a position corresponding to P136 .

71. (Previously presented) The isolated variant of claim 66, further comprising the amino acid mutation corresponding to G195E .

72. (Previously presented) The isolated variant of claim 71, further comprising a silent mutation in at least one of the positions corresponding to A3 and P136 .

73. (Previously presented) The isolated variant of claim 66, comprising the amino acid mutation corresponding to N535D .

74. (Previously presented) The isolated variant of claim 73, further comprising a silent mutation in at least one of the positions corresponding to P136, L312, and T218.

75. (Previously presented) The isolated variant of claim 66, further comprising the amino acid mutation corresponding to M70V .

76. (Previously presented) The isolated variant of claim 75, further comprising a silent mutation at a position corresponding to P136 .

77. (Previously presented) The isolated variant of claim 64, which has the amino acid mutations corresponding to S10P, M70V, G195E, V494A and N535D .

78. (Previously presented) The isolated variant of claim 77, further comprising a silent mutation at a position corresponding to P136.

79. (Previously presented) The isolated variant of claim 64, which has the amino acid mutation corresponding to N413D .

80. (Previously presented) The isolated variant of claim 79, further comprising a silent mutation at a position corresponding to S550 .

81. (Previously presented) The isolated variant of claim 66, comprising the amino acid mutation corresponding to N413D .

82. (Previously presented) The isolated variant of claim 81, further comprising a silent mutation in at least one of positions corresponding to S550 and S610.

83. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~from ATCC46032~~ and a mutation in at least one amino acid ~~aligned with~~ corresponding to an amino acid selected from the group consisting of S10, M70, C515, N535, N537, and N413 of SEQ ID NO: 10 ~~the wild-type galactose oxidase~~ and wherein the variant has improved D-galactose oxidation activity as compared to the wild-type galactose oxidase.

84. (Currently amended) The isolated variant of claim 83, further comprising at least one mutation in an amino acid corresponding to an amino acid selected from G195 and V494 of the wild-type galactose oxidase~~, and wherein the variant has improved D-galactose oxidation activity as compared to the wild-type galactose oxidase~~.

85. (Previously presented) The isolated variant of claim 83, wherein the mutation is selected from a mutation corresponding to at least one of the group consisting of S10P, M70V, N413D C515S, N535D, and N537D .

86. (Previously presented) The isolated variant of claim 85, further comprising at least one amino acid mutation corresponding to a mutation selected from the group consisting of G195E and V494A .

87. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the

sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~from ATCC46032~~

and a mutation in an amino acid corresponding to N537 of SEQ ID NO: 10 ~~the wild-type galactose oxidase~~, and

wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

88. (Previously presented) The isolated variant of claim 87, wherein the mutation is N537D.

89. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~from ATCC46032~~ and mutations in amino acids corresponding to V494 and C515 of SEQ ID NO: 10 ~~of the wild-type galactose oxidase~~, and wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

90. (Previously presented) The isolated variant of claim 89, wherein the mutations are V494A and C515S.

91. (Canceled)

92. (Canceled)

93. (Currently Amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~of ATCC46032~~ and mutations in amino acids corresponding to V494 and S10 of SEQ ID NO: 10 ~~of the wild-type galactose oxidase~~, and wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

94. (Previously presented) The isolated variant of claim 93, wherein the V494 mutation is V494A, and the S10 mutation is S10P.

95. (Canceled)

96. (Canceled).

97. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~of ATCC46032~~ and mutations in amino acids corresponding to V494, and N535 of SEQ ID NO: 10 ~~of the wild-type galactose oxidase~~, and wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

98. (Previously presented) The isolated variant of claim 97, wherein the V494 mutation is V494A, and the N535 mutation is N535D.

99. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~of ATCC46032~~ and mutations in amino acids corresponding to V494 and M70 of SEQ ID NO: 10 ~~of the wild-type galactose oxidase~~, wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

100. (Previously presented) The isolated variant of claim 99, wherein the V494 mutation is V494A, and the M70 mutation is M70V.

101. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~from ATCC46032~~ and mutations in amino acids corresponding to V494, S10, M70,

G195, and N535 of SEQ ID NO: 10 ~~of the wild-type galactose oxidase~~, and wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

102. (Previously presented) The isolated variant of claim 101, wherein the V494 mutation is V494A, the S10 mutation is S10P, the M70 mutation is M70V, the G195 mutation is G195E, and the N535 mutation is N535D.

103. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type , which variant has a mutation in an amino acid corresponding to N413 in SEQ ID NO:10.

104. (Previously presented) The isolated variant of claim 103, wherein the mutation is N413D.

105. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type ~~of ATCC46032~~ and a mutation in an amino acid corresponding to N413 of ~~the wild-type galactose oxidase~~ SEQ ID NO: 10, wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

106. (Previously presented) The isolated variant of claim 105, wherein the N413 mutation is N413D.

107. (Currently Amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type galactose oxidase having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type which variant has mutations in amino acids corresponding to N413 and V494 of SEQ ID NO:10.

108. (Previously presented) The isolated variant of claim 107, wherein the N413 mutation is N413D, and the V494 mutation is V494A.

109. (Currently amended) An isolated galactose oxidase variant which has at least 90% amino acid sequence identity to a wild-type ~~*D. dendroides*~~ galactose oxidase ~~of ATCC46032~~ having the sequence of SEQ ID NO:10 wherein the amino acid D at position 537 of SEQ ID NO: 10 is N in the wild-type and mutations in amino acids corresponding to N413 and V494 of SEQ ID NO: 10 ~~of the wild-type galactose oxidase~~, and wherein the variant has improved D–galactose oxidation activity as compared to the wild-type galactose oxidase.

110. (Previously presented) The isolated variant of claim 109, wherein the N413 mutation is N413D, and the V494 mutation is V494A.

111. (Previously presented) An isolated galactose oxidase having an amino acid sequence selected from the group consisting of SEQ ID NOS: 10-21.

112. (Cancelled).

113. (Previously presented) The isolated variant of claim 63, wherein the galactose oxidase variant has about 99% amino acid sequence identity to SEQ ID NO:10 wherein the amino acid at position 537 is N.

114. (Previously presented) The isolated variant of claim 64, wherein the galactose oxidase variant has about 99% amino acid sequence identity to SEQ ID NO:10 wherein the amino acid at position 537 is N.

115. (Previously presented) The isolated variant of claim 107, wherein the galactose oxidase variant has about 99% amino acid sequence identity to SEQ ID NO:10 wherein the amino acid at position 537 is N.

116. (Currently amended) The isolated variant of claim 83, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

117. (Currently amended) The isolated variant of claim 87, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

118. (Currently amended) The isolated variant of claim 89, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

119. (Currently amended) The isolated variant of claim 93, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

120. (Currently amended) The isolated variant of claim 97, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

121. (Currently amended) The isolated variant of claim 99, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

122. (Currently amended) The isolated variant of claim 101, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

123. (Currently amended) The isolated variant of claim 103, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

124. (Currently Amended) The isolated variant of claim 105, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.

125. (Currently amended) The isolated variant of claim 109, wherein the galactose oxidase variant has about 99% amino acid sequence identity to the wild-type ~~*D. Dendroides*~~ galactose oxidase ~~of ATCC46032~~.